

Date: Monday, 5/7/2007 9:57:40 AM
User: Kim Johnston

Process Sheet

Customer	: CU-DAR001 Dart Helicopters Services	Drawing Name	: HIGH AFT X-TUBE 412
Job Number	: 32230		
Estimate Number	: 10559		
P.O. Number	: <i>N/A</i>	Part Number	: D412664203
This Issue	: 5/7/2007	S.O. No.	: <i>N/A</i>
Prsht Rev.	: <i>NC</i>	Drawing Number	: D412-664-243 REV D
First Issue	: <i>N/A</i>	Project Number	: <i>N/A</i>
Previous Run	: 32229	Drawing Revision	: D
	Type : LANDING GEAR	Material	: <i>N/A</i>
Written By	: <i>[Signature]</i>	Due Date	: 6/10/2007
Checked & Approved By	: <i>[Signature]</i>	Qty:	1 Um: Each
Comment	Est Rev:E 04.02.16 Reformat; Added D3189-1 K/DS Est Rev:F 06-03-29 Remove Coments on Pick List JLM Est Rev:G 06.12.08 per ECN 886 EC Est Rev:H 07-04-30 As per Rev D JLM		

Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
---------	-----------------------	---------------

1.0	DC	DOCUMENT CONTROL
-----	----	------------------

*K5070538*

Comment: DOCUMENT CONTROL

Photocopy bluefile and create labels as per PPP D412-664-203 CHG 006

E 07/10/29

2.0	D6009129	Crosstube Material
-----	----------	--------------------



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Pick:

Qty Part number: Description Batch

1 D6009-129 Crosstube *76548*

Check OD = 3.500"; ID = 2.250"

*86 07-06-05**(2)*

3.0	MORI SEIKI	MORI SEIKI CNC LATHE LARGE
-----	------------	----------------------------



Comment: MORI SEIKI CNC LATHE LARGE

1-Fill tube with sand & install plugs DT8534 on both ends as per Folio FA166

2-Turn first side as per Folio FA166

3-Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D412-664-243.

28 07/06/08

4.0	QC1	INSPECT ALL DIM TO DIM SHEET
-----	-----	------------------------------



Comment: INSPECT ALL DIM TO DIM SHEET

28 07/04/07

Date: Monday, 5/7/2007 9:57:40 AM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: HIGH AFT X-TUBE 412

Job Number: 32230

Part Number: D412664203

Job Number:



Seq. #:

Machine Or Operation:

Description :

5.0

MORI SEIKI

MORI SEIKI CNC LATHE LARGE



Comment: MORI SEIKI CNC LATHE LARGE

1-Turn second side as per Folio FA166

2-Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D412-664-243.

3- Remove sand and plugs

4-Scribe part # and batch # using vibrating stylus as per Dwg D412-664-243

Inside of

Cuff(Donot engrave on outside of tube)

27 07/06/07

6.0

QC1

INSPECT ALL DIM TO DIM SHEET



Comment: INSPECT ALL DIM TO DIM SHEET

27 07/06/07

7.0

QC8

SECOND CHECK



Comment: SECOND CHECK

SA 07.06.07

8.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Polish entire outside surface of crosstube

EL 7-6-8

9.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

DP 7-6-8

10.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

EL 7-6-8

11.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: Inspect work & Chemical conversion Coat

fm 07-08-210

Date: Monday, 5/7/2007 9:57:40 AM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: HIGH AFT X-TUBE 412

Job Number: 32230

Part Number: D412664203

Job Number:



Seq. #:

Machine Or Operation:

Description :

12.0

BENDING

BENDING MACHINE



Comment: BENDING MACHINE

Bend tube as per Dwg D412-664-243 using CNC bender program 412-af and Folio FT010

EL 7-8-21

13.0

QC15

DIMENSIONAL CHECK OF X-TUBES



Comment: DIMENSIONAL CHECK OF X-TUBES

7-8-28 @

14.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Drill pilot holes in tube as per Dwg D412-664-243 using drill Jig DT8550 & DT8551

2-Ream hole to finish size in tube as per Dwg D412-664-243 using drill Jig DT8550 & DT8551. Check dimensions between holes, both sides on both cuffs, to ensure alignment with saddle holes.

3-Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D412-664-243

EL 7-8-29
JD 7-9-11

15.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

JD 7-9-11

16.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

En 02/09/12

17.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

En 02/09/12

checked all holes

18.0

OUTSIDE SERV.10

OUTSIDE SERVICES -LG



Comment: Sub-Contracting OUTSIDE SERVICES

Liquid Penetrant Inspection as per QSI 038Or

Issue P/O: 4568 LPI as per ASTM 1417

Level 2 Attach copy of NDT results to work order

C207/09/12 ①

Date: Monday, 5/7/2007 9:57:40 AM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: HIGH AFT X-TUBE 412

Job Number: 32230

Part Number: D412664203

Job Number:



Seq. #:

Machine Or Operation:

Description :

19.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Inspect for transit damage

Ensure copy of NDT results attached to work order.

10/2/15 (1)

20.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: Inspect for damage & ensure results are as per Dwg D412-664-203

1005-19 (1)

21.0

SPRAY PAINTING

SPRAY PAINTING



Comment: SPRAY PAINTING

1-Prime inside and outside crosstube as per QSI 005 4.2

2-Paint outside crosstube with White Imron as per QSI 005 4.2

} ml 07 10 24 (1)
RT 07 - 10 21

(P11)

22.0

QC14

INSPECT SPRAY PAINT



Comment: Inspect Spray Paint

Wrap in plastic bag to protect from scratches

RT 07 - 10 - 25

23.0

D3595

Rubber Cushion (per sq ft)



Comment: Qty.: 0.0492 sf(s)/Unit Total : 0.0492 sf(s)

Rubber Cushion (per sq ft)

.630" x5.70" x2pcs

Batch: 37835

RT 07 - 10 - 25

24.0

D2856600

Abrasion Strip



Comment: Qty.: 1.7640 f(s)/Unit Total : 1.7640 f(s)

Pick:

Qty Part number Description Batch

2 D2856-600(Cut to 10.090") Abrasion Strip 25656

RT 07 - 10 25

25.0

D28961

Support



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Pick:

Qty Part number Description Batch

1 D2896-1 Support 31044

RT 07 - 10 - 25

Date: Monday, 5/7/2007 9:57:40 AM

User: Kim Johnston

Process: eet

Customer: CU-DAR001 Dart Helicopters Services

Name: HIGH AFT X-TUBE 412

Job Number: 32230

Number: D412664203

Job Number:



Seq. #:

Machine Or Operation:

Description :

26.0

D31891

Chafing Shield



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Pick:

Qty Part number Description Batch

2 D3189-1 Chafing Shield

30201

RT 07-10-25

27.0

MS2192028

Clamp(per MIL-DTL-8783C)



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

Pick:

Qty Part number Description Batch

4 MS21920-28 Clamp

104423

RT 07-10-25

28.0

MS2192030

clamp(per MIL-DTL-8783C)



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

clamp(per MIL-DTL-8783C)

batch: 100154

RT 07-10-25

29.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

Assemble as per Dwg D412-664-203

1-Install supports with magnobond as per QSI 015 Adhere for for 12 Hrs

A/R 6398 Magnobond

Batch: 104677

Expiry Date: 08-10-01

11:50 am

RT 07-10-25

2-Install clamps as per Dwg D212-664-141. Torque clamps to 80-100 in lb.

RT 07-10-26

30.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

RT 07-10-26

31.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Pick Packing Kit

Date: Monday, 5/7/2007 9:57:41 AM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: HIGH AFT X-TUBE 412

Job Number: 32230

Part Number: D412664203

Job Number:



Seq. #:

Machine Or Operation:

Description :

32.0

AN640A

Bolt



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

Bolt

Batch: M104517

AS

33.0

AN641A

Bolt



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Bolt

Batch: M100743

AS

34.0

AN960JD616

Washer



Comment: Qty.: 18.0000 Each(s)/Unit Total : 18.0000 Each(s)

Washer

Batch: M105125

AS

35.0

MS21042L6

Nut



Comment: Qty.: 6.0000 Each(s)/Unit Total : 6.0000 Each(s)

Nut

Batch: M104374

AS

36.0

QC4

INSPECT 100% KITS FOR COMPLETENESS



Comment: INSPECT 100% KITS FOR COMPLETENESS

AS 07/10/29

37.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and pack for shipping as per PPP D412-664-203

*****Ensure tube is not packaged if curing time is less than 12 hrs, see step 27 for application time & date

Time & date of packaging: 10:00AM 07/10/29

Location: _____

PPP Rev: _____

AS
07/10/29 SP (12)

Date: Monday, 5/7/2007 9:57:41 AM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: HIGH AFT X-TUBE 412

Job Number: 32230

Part Number: D412664203

Job Number:



Seq. #:

Machine Or Operation:

Description :

38.0

QC21

FINAL INSPECTION/W/O RELEASE



(1)

Comment: FINAL INSPECTION/W/O RELEASE

22 02/10/09

Job Completion



U 07.10.29

DART AEROSPACE LTD	Work Order: 32230
Description: Crosstube Assembly (412 High Aft)	Part Number: D412-664-243
Inspection Dwg: D412-664-243 Rev: B 0 84 07-04-07	Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

07-04-07

07-04-07

Inspection Sheet	Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
SIDE A	2.684	+0.005/-0.000	2.688	/			
	2.748	+0.005/-0.000	2.752	/			
	2.884	+0.005/-0.000	2.888	/			
	3.019	+0.005/-0.000	3.021	/			
	3.163	+0.005/-0.000	3.167	/			
	3.308	+0.005/-0.000	3.311	/			
	3.429	+0.005/-0.000	3.431	/			
	2.990	+0.005/-0.000	2.993	/			
	2.618	+0.005/-0.000	2.618	/			
SIDE B	0.200	+/-0.010	.200	/			
	R0.063	+/-0.010	.063	/			
	R0.500	+/-0.010	.500	/			
	4.971	+/-0.001	4.973	/			07-06-07
	2.684	+0.005/-0.000	2.688	/			
	2.748	+0.005/-0.000	2.752	/			
	2.884	+0.005/-0.000	2.888	/			
	3.019	+0.005/-0.000	3.021	/			
	3.163	+0.005/-0.000	3.167	/			
	3.308	+0.005/-0.000	3.311	/			
	3.429	+0.005/-0.000	3.431	/			
	2.990	+0.005/-0.000	2.993	/			
	2.618	+0.005/-0.000	2.618	/			
	0.200	+/-0.010	.200	/			
	R0.063	+/-0.010	.063	/			
	R0.500	+/-0.010	.500	/			
	4.971	+/-0.001	4.973	/			07-06-07
	124.09	+/-0.020	124.09	/			

Measured by: J. P.	Audited by: SA	Prototype Approval:	N/A
Date: 07/06/07	Date: 07-06-07	Date:	N/A

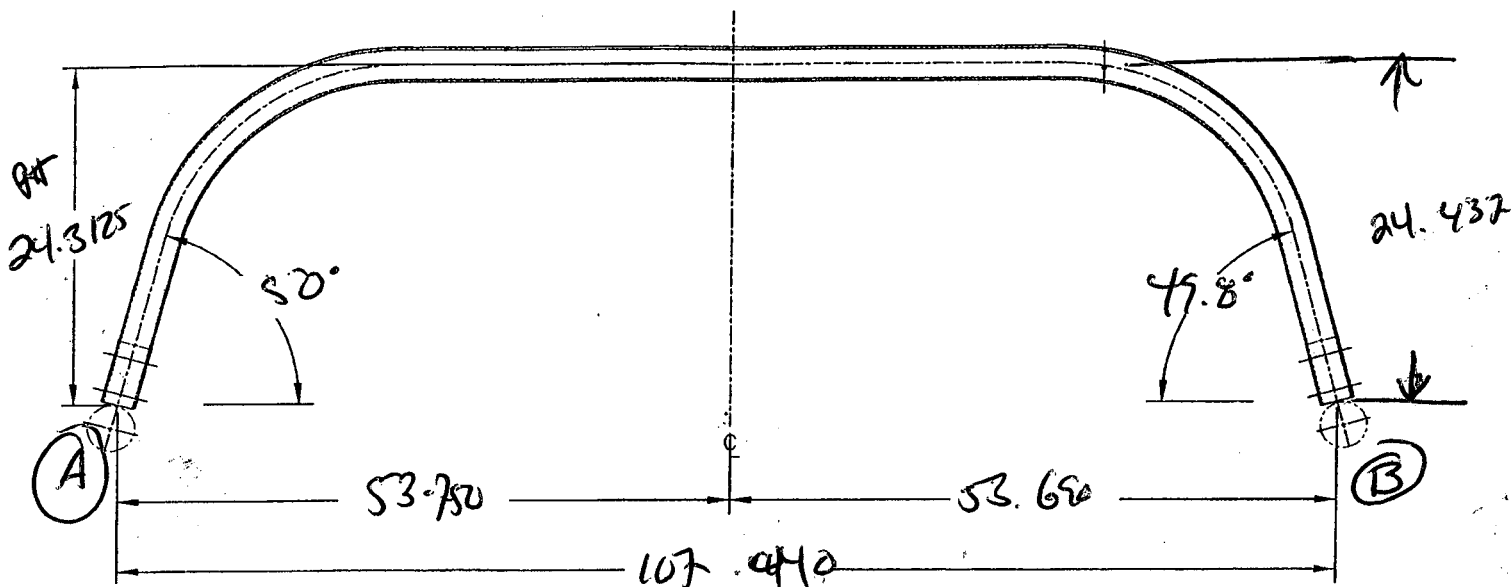
Rev	Date	Change	Revised by	Approved
A	04.06.16	New Issue (P/O D412-664-203)	KJ/JLM	
B	06.03.09	Dwg Rev updated	KJ/JLM	

DART AEROSPACE LTD		Work Order:	32230
Description: Crosstube High Aft (412)		Part Number:	D412-664-203
Inspection Dwg: D412-664-243	Rev: C D	Page 1 of 1	

Rev 07.04.07

Required Dimension	Min	Max
Height	24.24 24.31	24.43
1/2 Span	53.59 53.66	53.78
Angle	49	52
Total Span	107.18 107.32	107.56

24.50
53.85
107.70
Rev 07.04.07



Comments
* Tube is off by 0.125" on the left heights but within the tol.

QC15 Inspection	2
Date	07.02.06

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	[Signature]

DART

DESIGN PH	DRAWN BY PH	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED QD	APPROVED [Signature]	DRAWING NO. D412-664-243	REV. D SHEET 1 OF 3
DATE 07.03.09		TITLE CROSSTUBE ASSEMBLY (412 HI AFT) NTS	
A	01.10.17	NEW ISSUE	
B	05.02.04	ADD HOLES FOR COMPATABILITY WITH BHT/AA SKIDTUBES	
C	06.10.27	REMOVE D2856-600-1087, ADD D2732-058 & MAGNOBOND 6398 MS21920-32 WAS MS21920-30	
D	07.03.09	REMOVE D2732-058, CHANGE TO D3595-063-570	

RELEASE07.04.24 **[Signature]**

Qty	Part Number	Description
X	D412-664-243	CROSSTUBE ASSEMBLY (412 HIGH AFT)
1	D6009-129	CROSSTUBE
2	D3595-063-570	RUBBER CUSHION
1	D2896-1	SUPPORT
2	D2856-600-1009	ABRASION STRIP
4	MS21920-28	CLAMP
2	MS21920-30	CLAMP (OR MS21920-32)
2	D3189-1	CHAFING SHIELD
AVR	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)

GENERAL NOTES:

- 1) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 2) MATERIAL: MANUFACTURED FROM D6009-129
FINISHED LENGTH = 124.09±0.020
- 3) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART 005 4.2
- 4) PART IS SYMMETRIC ABOUT CENTERLINE.
- 5) RUN-OFF PART. BLEND OUT EDGE LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH.
- 6) BEND PROGRESSIVELY WITH A MINIMUM OF 8 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- 7) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 8) SCRIBE DART PART NUMBER AND BATCH NUMBER IN THIS AREA WITH VIBRATING STYLUS.
- 9) INSTALL D2856-600-1009 ABRASION STRIP WITH A 0.13 (REF) GAP ON BOTTOM SIDE OF CROSSTUBE PER QSI 035.
- 10) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 11) APPLY A 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 TO THE SURFACE OF D2896-1 THAT WILL BE IN CONTACT WITH THE CROSSTUBE PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 12) INSTALL MS21920-30 CLAMPS (OR -32) WITH D3595-063-570 RUBBER CUSHIONS TO SECURE D2896-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMPS ARE OPPOSITE CROSSTUBE SUPPORT.
- 13) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

SHOP COPY

RETURN TO

ENGINEERING

UNCONTROLLED COPY



SUBJECT TO AMENDMENT
WITHOUT NOTICE

WORK ORDER

NO. 32230

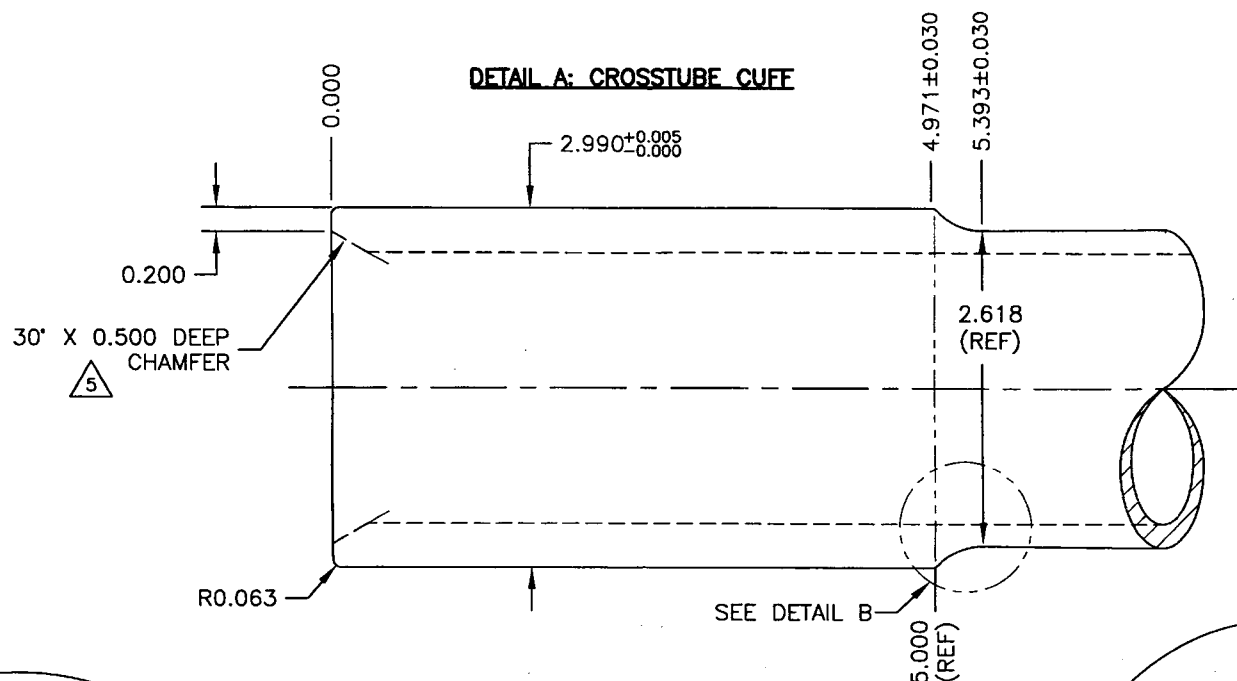
Copyright © 2001 by DART AEROSPACE LTD

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.

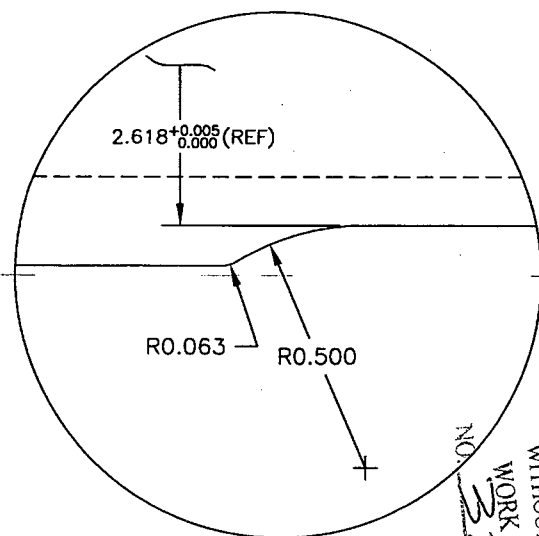
COPYRIGHT © 2001 BY DART AEROSPACE LTD. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	DESIGN	DRAWN BY	 DART AEROSPACE LTD. MISSISSAUGA, ONTARIO, CANADA		
	<i>PH</i> CHECKED	<i>PH</i> APPROVED		DRAWING NO.	REV. D
		<i>QP</i>		D412-664-243	SHEET 2 OF 3
	DATE		TITLE		SCALE
07.03.09			CROSSTUBE ASSEMBLY (412 HI AFT)	1:10	

RELEASED
07.04.2004
REF ECN 989

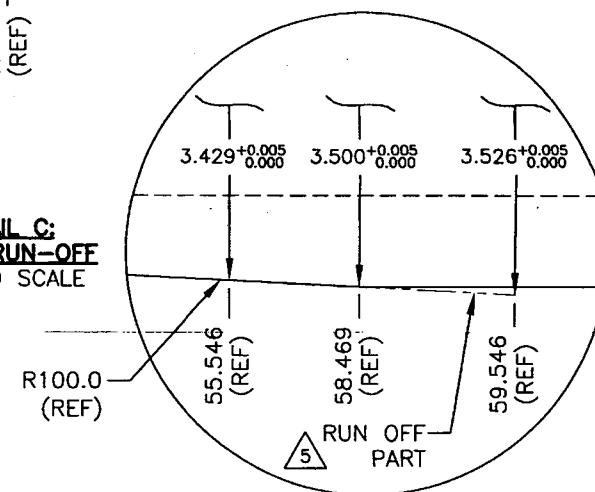
DETAIL A: CROSSTUBE CUFF



**DETAIL B: CUFF
TRANSITION
SCALE 4:1**



**DETAIL C:
TAPER RUN-OFF
NOT TO SCALE**



COPYRIGHT © 2001 BY DART AEROSPACE LTD.

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL
AND IS SUPPLIED ON THE EXPRESS CONDITION
THAT IT IS NOT TO BE USED FOR ANY PURPOSE
OR COPIED OR COMMUNICATED TO ANY OTHER
PERSON WITHOUT WRITTEN PERMISSION FROM
DART AEROSPACE LTD.

DESIGN PH	DRAWN BY PH	DART	DART AEROSPACE LTD. HAMPSHIRE, ENGLAND, CANADA
CHECKED J	APPROVED [Signature]	DRAWING NO. D412-664-243	REV. 0 SHEET 3 OF 3
DATE 07.03.09	TITLE CROSSTUBE ASSEMBLY (412 HI AFT)	SCALE 1:1	

NO
WORK ORDER
32230
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
ENGINEERING
RETURN TO
SHOP COPY

**Hea hAir**

INTERNATIONAL (1991) INC.

681 Ave. Lepine, Dorval, Québec H9P 1G3
Tél.: (514) 636-1000 • Fax: (514) 636-0031

W.O. N° 37465

A.M.O. Number: 46/90

NON-DESTRUCTIVE TESTING REPORT**AIRCRAFT / COMPONENT INFORMATION**

REGISTRATION:

MODEL/TYPE:

SERIAL NUMBER:

TOTAL HR/LDG:

OPERATED BY:

BASED AT:

INSPECTION REQUIREMENTS

Carry out FPI of (7) cross tubes (external surface) as per ASTM E-1417-05 and the Dart QSI 038, Section 4.1.1 (on file at client) - parts delivered to HeathAir.

Qty (3) P/N D212-664-201 S/N's B32682, B32679 and B32683.

Qty (1) P/N D412-664-203 S/N B32230.

Qty (3) P/N D206-667-203 S/N's B34042, B34049 and B34048.

☐ RADIOGRAPHY☐ ULTRASONIC☒ PENETRANT☐ MAGNETIC PARTICLE☐ EDDY CURRENT**INSPECTION REPORT**

Fluorescent penetrant inspection was performed in accordance with the above requirements on (7) cross tubes.

Note: A Level 3 penetrant was substituted for the requested Level 2 (3 is more sensitive)
Ardrox 970P25E Batch #04B503.

(7) cross tubes inspected. (7) PASSED / (0) FAILED.

THE MAINTENANCE DESCRIBED ABOVE HAS BEEN PERFORMED IN ACCORDANCE WITH
THE APPLICABLE STANDARDS OF AIRWORTHINESS

INSPECTED BY:

DATE September 18, 2007

INSPECTION
STAMP(S) **CUSTOMER INFORMATION**

CUSTOMER: Dart Aerospace

P.O. NUMBER

PO 00004568

ADDRESS:

CONTACT NAME: Linda Lacelle

LABOUR

②

\$

MATERIALS

②

TRAVEL EXPENSES

②

GST

HOTEL EXPENSES

②

PST

INVOICE NO.

TOTAL \$

WHITE COPY - INSPECTION FILE • YELLOW COPY - CUSTOMER • PINK COPY - ACCOUNTANT

• Chris Provencal

From: David Shepherd [dshepherd@dartaero.com]
Sent: October 18, 2007 1:50 AM
To: 'Chris Provencal'
Cc: 'Mike Petsche'; 'Bill Beckett'
Subject: RE: NCR D412-664-243

Chris,

This is a tough one. Obviously, the safe answer is to scrap the tube, especially in consideration of the recent failure at Asesta. However, if we were to do so, we'd probably be throwing at least \$2000 into the garbage, so that is tough to swallow.

Based on the fact that the damage is minimal, the transition is smooth, and the damage is on the top (compression) side of the tube at a 45 degree angle and 3" away from the support, I would be inclined to ACCEPT this tube.

How does Bill feel about this tube?

David

From: Chris Provencal [mailto:cprovencal@dartaero.com]
Sent: Thursday, October 11, 2007 9:29 AM
To: 'David Shepherd'
Cc: 'Mike Petsche'
Subject: NCR D412-664-243

David,

Attached are pictures / pdf detailing the 'depression' in a D412-664-243 crosstube. As best as I can measure it, the depression isn't larger than 0.013". The actual depth is hard to measure, with the tube being an ellipse at that location, and the surface curving in two directions. I measured a location on the opposite side of the tube, in a similar location, and got a 0.013" difference. They've blended out the depression rather well, you can barely feel the transitions with your finger.

The depression is 3.2" away from the support, on the top portion of the tube, approximately at 45 deg. from the top of the top. Approximately 1.25" long (along tube length) x 0.63" wide (along circumference). The surface marks you see in the photos are from the blade micrometer, which marks the tubes extremely easily. All those marks would have to be polished out if the tube is acceptable.

Considering the depth is close to the allowable damage tolerance of the tube (0.015"), I'm not keen on accepting this myself. Although, the location of the depression is not likely to be physically damaged from everyday use, although it could still corrode.

What is your disposition on this tube?

-Chris

No virus found in this incoming message.

Checked by AVG Free Edition.

Version: 7.5.488 / Virus Database: 269.14.6/1061 - Release Date: 10/10/2007 8:43 AM

No virus found in this outgoing message.

Checked by AVG Free Edition.

Version: 7.5.488 / Virus Database: 269.14.13/1075 - Release Date: 10/17/2007 9:38 AM

18/10/2007